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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/620,052	07/14/2003	Yasumichi Hitoshi	021044-004010US	7655

20350 7590 08/04/2006

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EXAMINER	
HALVORSON, MARK	

ART UNIT	PAPER NUMBER
1642	

DATE MAILED: 08/04/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/620,052	HITOSHI ET AL.	
	Examiner	Art Unit	
	Mark Halvorson	1642	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *12 June 2006*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-44* is/are pending in the application.

4a) Of the above claim(s) *3-6,10,13,14,17,19-22 and 24-44* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1, 2, 7-9, 11, 12, 15, 16, 18 and 23* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *1/29/2004; 11/18/2005*
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☒ Other: *sequence search*.

DETAILED ACTION

Election/Restrictions

1. Applicants election with traverse of Group 1 is acknowledged. Applicant's selection of polypeptides related to SEQ ID N0:l4 is acknowledged. Applicants selection of the following species is acknowledged: (ii)(a) nuclease activity; (ii)(b) fluorescent marker level; (ii)(b)(II) cell tracker dye; (iii) transformed cell line; (iiie) A549; and (iv) a small organic molecule.

Beth Kelly of Townsend, Townsend and Crew was called on July 19, 2006 to further select one of two species, (ii)(a) nuclease activity or (ii)(b) fluorescent marker level. Beth Kelly selected (ii)(a) nuclease activity.

The traversal is on the ground(s) that the inventions have not been shown to be unrelated and the examination of all groups would not impose a serious burden on the examiner. Applicant's assert that Group 2 and 3, directed to a method of modulating cell cycle arrest using a compound that modulates the cell cycle or a target protein for modulation of the cell cycle; and Group 1 directed to a method of identifying a compound that modulates cell cycle arrest by contacting a cell that comprises a target polypeptide with the compound, as the required compositions of Group 1 are also found in Groups 2 and 3. This response is not found persuasive. MPEP 802.01 provides that restriction is proper between inventions which are independent or distinct. Here, the

inventions of the various groups have been shown to be distinct as set forth in the restriction of June 12, 2006. Claim 24 of Group 2 and Claim 34 of Group 3 do depend on claim 1 but only to the extent that it uses the compound identified by claim 1 and furthermore, claim 24 and claim 34 are directed to in vivo use. Also, as previously mentioned in the Office Action of May 8, 2006 the materially distinct inventions of Group 1-3 differ in objectives, method steps and reagents.

As to the question of burden of search, the inventions are classified differently, necessitating different searches in different class/subclasses. Further, classification of subject matter is merely one indication of the burdensome nature of the search involved. The literature search, particularly relevant in this art, is not coextensive and is much more important in evaluating the burden of search (art here is cancer therapy). Different searches and issues are involved in the examination of each group. For these reasons the restriction requirement is deemed to be proper.

Claims 1-44 are pending in the application and Claims 3-6, 10, 13, 14, 17, 19-22 and 24-44 are withdrawn from further consideration pursuant to 37 CFR 1.142(b), as being drawn to a nonelected inventions, there being no allowable generic or linking claim. Applicant timely traversed the restriction (election) requirement in the reply filed on June 12, 2006. Claims 1, 2, 7-9, 11, 12, 15, 16, 18 and 23 are currently under prosecution.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claims 1, 2, 7-9, 11, 12, 15, 16, 18 and 23 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The phrase "hybridizes under stringent conditions" are indefinite because it is not clear what is meant by these terms To overcome this rejection the conditions for the hybridization, including the wash step, must be incorporated into claims 1 and 23, provided written support for such an amendment exists.

3. Claims 1, 2, 7-9, 11, 12, 15, 16, 18 and 23 are rejected under 35 U.S.C. 112, second paragraph, as being incomplete for omitting essential steps, such omission amounting to a gap between the steps. See MPEP § 2172.01. The omitted steps is describing how the identification of a compound that modulates cell cycle arrest can be obtained based on the determination of a chemical or phenotypic effect of that compound upon the cell.

The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

4. Claims 1, 2, 7-9, 11, 12, 15, 16, 18 and 23 are rejected under 35 USC 112, first paragraph, as lacking an adequate written description in the specification.

The claims are drawn to a method for identifying a compound that modulates cell cycle arrest, the method comprising the steps of: (i) contacting a cell comprising a target compound consisting of a flap structure specific endonuclease 1 (FEN1) or fragment thereof or inactive variant thereof, the target polypeptide encoded by the complement of a nucleic acid that hybridizes under stringent conditions to a nucleic acid encoding a polypeptide having an amino acid sequence of SEQ ID NO:14; and (ii) determining the chemical or phenotypic effect of the compound upon the cell comprising the target polypeptide or fragment thereof or inactive variant thereof, thereby identifying a compound that modulates cell cycle arrest.

The specification describes two dominant negative mutants of FEN1 and demonstrates that the expression of two FEN1 dominant negative mutants are antiproliferative in A549 and H1299 cells (see Figures 66-68).

The Federal Circuit addressed the application of the written description requirement to DNA-related inventions in University of California v. Eli Lilly and Co., 119 F.3d 1559, 43 USPQ2d 1398 (Fed. Cir. 1997). The court stated that "[a] written description of an invention involving a chemical genus, like a description of a chemical species, requires a precise definition, such as by structure, formula, [or] chemical name, of the claimed subject matter sufficient to distinguish it from other materials." Id. The court in Enzo adopted the standard that the written description requirement can be met by "show[ing] that an invention is complete by disclosure of sufficiently detailed, relevant

identifying characteristics ....i.e., complete or partial structure, other physical and/or chemical properties, functional characteristics when coupled with a known or disclosed correlation between function and structure, or some combination of such characteristics. (Enzo Biochem, Inc. V. Gen-Probe Inc., 296 F.3d 1316, 1324; 63 USPQ2d 1609, 1613 (Fed. Cir. 2002)). (emphasis omitted, bracketed material in original).

Thus, the instant specification may provide an adequate written description of flap structure specific endonuclease 1 (FEN1) or fragment thereof or inactive variant, per Lilly by structurally describing a representative number of peptides that function as claimed or by describing structural features common to the members of the genus, which features constitute a substantial portion of the genus. Alternatively, per Enzo, the specification can show that the claimed invention is complete by disclosure of sufficiently detailed, relevant identifying characteristics, functional characteristics when coupled with a known or disclosed correlation between function and structure, or some combination of such characteristics.

In this case, the specification does not describe the genus of peptides of flap structure specific endonuclease 1 (FEN1) or fragment thereof or inactive variants thereof in a manner that satisfies either the Lilly or Enzo standards. There are insufficient structural features common to all members of the genus of peptides of flap structure specific endonuclease 1 (FEN1) or fragment thereof or inactive variants thereof.

Variants include conservatively modified variants which are defined in the specification as substitutions, deletions or additions to a protein sequence which alters,

adds or deletes a single amino acid or a small percentage of amino acids in the encoded sequence is a "conservatively modified variant" where the alteration results in the substitution of an amino acid with a chemically similar amino acid (paragraph 133). Such conservatively modified variants are in addition to and do not exclude polymorphic variants, interspecies homologs, and alleles of the invention.

Fragments of polypeptides are not specifically defined in the specification but theoretically could be a multitude of different peptides. "Fragment" reads on a peptide as small as 2 amino acids to as long as 380 amino acids. Applicant has not identified which domain(s) in the protein is/are needed for interaction between the polypeptide and small molecule. Even if such domains are identified for one type of modulator there is no objective evidence to show that this is the domain for interaction for all the different types of small molecules.

Furthermore, there are an unknown number of polypeptides encoded by the complement nucleic acid strand of a nucleic acid that hybridizes under stringent conditions to a nucleic acid encoding a polypeptide having an amino acid sequence of SEQ ID NO:14. This encompasses a complement nucleic acid strand of a nucleic acid that hybridizes to a nucleic acid encoding a polypeptide. A nucleic acid encoding a polypeptide having an amino acid sequence of SEQ ID NO:14 reads on a dipeptide consisting of two contiguous amino acids of SEQ ID NO:14.

In addition, a polypeptide encoded by a nucleic acid comprising a sequence of SEQ ID NO:13 reads on a dipeptide consisting of two amino acids encoded by contiguous nucleotides of SEQ ID NO:13.

The genus of target polypeptides encompassed by claims1,2 7-9, 11, 12, 15, 16, 18 and 23 consists of a multitude of peptides. The only common structural feature of all the species of that contain at least two contiguous amino acids in common with SEQ ID NO:14. Three species, the peptide of SEQ ID NO:14 and two dominant negative mutants does not adequately define the genus of peptides encompassed by claims 1, 2, 7-9, 11, 12, 15, 16, 18 and 23. Thus the claimed peptides do not meet the standard set forth in Lilly.

The instant specification may also provide an adequate written description of the target polypeptide if the specification can show that the claimed invention is complete by disclosure of sufficiently detailed, relevant identifying characteristics, functional characteristics when coupled with a known or disclosed correlation between function and structure, or some combination of such characteristics. The specification discloses three species, the peptide of SEQ ID NO:14 and two dominant negative mutants. The genus of peptides encompassed by claims 1, 2, 7-9, 11, 12, 15, 16, 18 and 23 are FIN1, fragments of FIN1, inactive variants of FIN1 and polypeptides encoded by the complement nucleic acid of a nucleic acid that hybridizes under stringent conditions to a nucleic acid encoding a polypeptide having an amino acid sequence of SEQ ID NO:14. There is insufficient information as to which amino acids can function as contemplated in the specification or even what positions are critical for these functions. Its not clear if amino acids can be randomly inserted into any amino acid position of FIN1 or if there is directed insertions of amino acids at these positions. Thus, the specification does not sufficient structural characteristics that correlate with the ability of the peptide to function

as contemplated by the specification and for the reasons set forth above do not meet the standards set forth by Enzo.

Thus, the specification does not provide an adequate written description of the genus of peptides of claims 1, 2, 7-9, 11, 12, 15, 16, 18 and 23 that is required to practice the claimed invention.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claims, 1, 2, 7, 8, 15, 16, 18 and 23 are rejected under 35 U.S.C. 102(b) as being anticipated by Harrington et al (US Patent No: 5, 874, 283, issued February 23, 1999).

The claims are drawn to a method for identifying a compound that modulates cell cycle arrest, the method comprising contacting a cell comprising a target compound consisting of a flap structure specific endonuclease 1 (FEN1) and determining the chemical or phenotypic effect of the compound upon the cell, thereby identifying a compound that modulates cell cycle arrest wherein modulation is activation of cancer cell cycle arrest, wherein the polypeptide is recombinant, wherein the polypeptide is encoded by a nucleic acid comprising SEQ ID NO:13, wherein the compound is a small organic molecule.

Harrington et al disclose a method for identifying modulating agents of the FEN-1 peptide of SEQ ID NO:14 (see Sequence Search) which reduce the cell's capacity to repair DNA damage or inhibit endogenously naturally-occurring FEN1 (column 39 lines 25-28). These modulating agent are candidate neoplastic agents which can be tested further for antineoplastic activity. Harrington et al further disclose that the present invention may be used to design drugs that inhibit the binding of FEN1 to DNA flaps or nicks and to catalyze nuclease activity on the flap strand (column 42 lines 58-61). The nucleic acid of SEQ ID NO:13 encodes the peptide of SEQ ID NO:14.

In addition Harrington et al teach a recombinant FIN1 polypeptide used in a yeast two hybrid system to detect compounds that bind to FIN1 to identify candidate FEN-1 modulatory agents. (column 36 line 62 to column 39 line 24). Enzymatic activity is used to detect binding of a compound to FIN1 (Id).

6. Claims 1, 9, 11, 12 are rejected under 35 U.S.C. 102(b) as being anticipated by Bai et al (FEBS letters 437:61-64,1998).

The claims are drawn to a method for identifying a compound that modulates cell cycle arrest, the method comprising contacting a cell comprising a target compound consisting of a flap structure specific endonuclease 1 (FEN1) and determining the chemical or phenotypic effect of the compound upon the cell, thereby identifying a compound that modulates cell cycle arrest, wherein he cell is the transformed cancer cell line A549.

Bai et al disclose that the treatment of the adenoma cancer cell line A549 with the small molecule flavone results in the inhibition of proliferation and cell cycle arrest of the A549 cell line. The A549 cell line inherently expresses FIN1.

Summary

7. No claims allowed.

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Mark Halvorson, PhD whose telephone number is (571) 272-6539. The examiner can normally be reached on Monday through Friday from 8:30am to 5 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jeffrey Siew, can be reached at (571) 272-0787. The fax phone number for this Art Unit is (571) 273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Mark Halvorson, PhD
Patent Examiner
571-272-6539

MISOOK YU
PRIMARY EXAMINER

GenCore version 5.1.9

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Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

Result No.	Score	% Query Match	Length	DB	ID	Description
1	1941	100.0	1144	2	US-08-455-968E-2	Sequence 2, Appli
2	1941	100.0	1144	2	US-08-455-968E-28	Sequence 28, Appl
3	1941	100.0	1757	3	US-09-949-016-585	Sequence 585, App
4	1941	100.0	1761	3	US-09-949-016-4903	Sequence 4903, Ap
5	1941	100.0	8073	3	US-09-949-016-12327	Sequence 12327, A
6	1941	100.0	8074	3	US-09-949-016-16645	Sequence 16645, A
7	1825	94.0	2033	2	US-08-455-968E-9	Sequence 9, Appli
8	1824	94.0	1930	2	US-08-455-968E-4	Sequence 4, Appli
9	1092.5	56.3	1149	2	US-08-455-968E-6	Sequence 6, Appli
10	1038	53.5	1541	3	US-09-426-557-3	Sequence 3, Appli
11	1038	53.5	1541	4	US-09-805-311-3	Sequence 3, Appli
12	1032	53.2	1381	3	US-09-426-557-5	Sequence 5, Appli
13	1032	53.2	1381	4	US-09-805-311-5	Sequence 5, Appli
14	1032	53.2	1463	3	US-09-426-557-1	Sequence 1, Appli
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17	1026	52.9	1478	4	US-09-805-311-7	Sequence 7, Appli
18	691	35.6	1023	3	US-09-940-244-364	Sequence 364, App
19	691	35.6	1032	3	US-09-146-319-1	Sequence 1, Appli
20	691	35.6	1032	3	US-09-175-973-1	Sequence 1, Appli
21	691	35.6	1032	3	US-09-940-244-356	Sequence 356, App
22	686	35.3	1023	3	US-09-940-244-383	Sequence 383, App
23	675	34.8	1023	2	US-08-757-653-175	Sequence 175, App
24	675	34.8	1023	2	US-08-823-516-78	Sequence 78, Appl
25	675	34.8	1023	3	US-08-759-038-114	Sequence 114, App
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28	675	34.8	1023	3	US-09-308-825A-114	Sequence 114, App
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33	665	34.3	1056	3	US-09-940-244-336	Sequence 336, App
34	657	33.8	1056	3	US-09-940-244-340	Sequence 340, App
35	648.5	33.4	675	3	US-09-248-796A-5910	Sequence 5910, Ap
36	642.5	33.1	985	3	US-09-940-244-397	Sequence 397, App
37	640	33.0	1164	3	US-09-684-938-141	Sequence 141, App
38	640	33.0	1164	3	US-09-308-825A-141	Sequence 141, App
39	640	33.0	1164	3	US-09-940-244-272	Sequence 272, App
40	633	32.6	1164	3	US-09-684-938-155	Sequence 155, App
41	633	32.6	1164	3	US-09-308-825A-155	Sequence 155, App
42	633	32.6	1164	3	US-09-940-244-286	Sequence 286, App
43	612	31.5	1071	3	US-09-940-244-388	Sequence 388, App
44	611.5	31.5	1054	3	US-09-684-938-150	Sequence 150, App
45	611.5	31.5	1054	3	US-09-308-825A-150	Sequence 150, App

ALIGNMENTS

```
RESULT 1
US-08-455-968E-2
; Sequence 2, Application US/08455968E
; Patent No. 5874283
;  GENERAL INFORMATION:
;    APPLICANT:  Harrington, John L.
;    APPLICANT:  Hsieh, Chih-Lin
;    APPLICANT:  Lieber, Michael
;    TITLE OF INVENTION:  Mammalian Flap-Specific Endonuclease
;    NUMBER OF SEQUENCES:  63
;    CORRESPONDENCE ADDRESS:
;      ADDRESSEE:  Townsend and Townsend and Crew LLP
;      STREET:  Two Embarcadero Center, 8th Floor
;      CITY:  San Francisco
;      STATE:  California
;      COUNTRY:  USA
;      ZIP:  94111-3834
;    COMPUTER READABLE FORM:
;      MEDIUM TYPE:  Floppy disk
;      COMPUTER:  IBM PC compatible
;      OPERATING SYSTEM:  PC-DOS/MS-DOS
;      SOFTWARE:  PatentIn Release #1.0, Version #1.25
;    CURRENT APPLICATION DATA:
;      APPLICATION NUMBER:  US/08/455,968E
;      FILING DATE:  30-MAY-1995
;      CLASSIFICATION:  435
;    ATTORNEY/AGENT INFORMATION:
;      NAME:  Apple, Randolph T.
;      REGISTRATION NUMBER:  36,429
;      REFERENCE/DOCKET NUMBER:  18985-000100
;    TELECOMMUNICATION INFORMATION:
;      TELEPHONE:  415-576-0200
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;    SEQUENCE CHARACTERISTICS:
;      LENGTH:  1144 base pairs
;      TYPE:  nucleic acid
;      STRANDEDNESS:  single
;      TOPOLOGY:  linear
;    MOLECULE TYPE:  cDNA
US-08-455-968E-2

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Best Local Similarity:  100.0%        Mismatches:      0
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US-10-620-052A-14 (1-380) x US-08-455-968E-2 (1-1144)

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Db        121 CAGTTCCTGATTGCTGTTCGCCAGGGTGGGGATGTGCTGCAGAATGAGGAGGGTGAGACC 180

Qy         61 ThrSerHisLeuMetGlyMetPheTyrArgThrIleArgMetMetGluAsnGlyIleLys 80
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        181 ACCAGCCACCTGATGGGCATGTTCTACCGCACCATTCGCATGATGGAGAACGGCATCAAG 240

Qy         81 ProValTyrValPheAspGlyLysProProGlnLeuLysSerGlyGluLeuAlaLysArg 100
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        241 CCCGTGTATGTCTTTGATGGCAAGCCGCCACAGCTCAAGTCAGGCGAGCTGGCCAAACGC 300

Qy        101 SerGluArgArgAlaGluAlaGluLysGlnLeuGlnGlnAlaGlnAlaAlaGlyAlaGlu 120
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        301 AGTGAGCGGCGGGCTGAGGCAGAGAAGCAGCTGCAGCAGGCTCAGGCTGCTGGGGCCGAG 360

Qy        121 GlnGluValGluLysPheThrLysArgLeuValLysValThrLysGlnHisAsnAspGlu 140
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        361 CAGGAGGTGGAAAAATTCACTAAGCGGCTGGTGAAGGTCACTAAGCAGCACAATGATGAG 420

Qy        141 CysLysHisLeuLeuSerLeuMetGlyIleProTyrLeuAspAlaProSerGluAlaGlu 160
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        421 TGCAAACATCTGCTGAGCCTCATGGGCATCCCTTATCTTGATGCACCCAGTGAGGCAGAG 480

Qy        161 AlaSerCysAlaAlaLeuValLysAlaGlyLysValTyrAlaAlaAlaThrGluAspMet 180
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        481 GCCAGCTGTGCTGCCCTGGTGAAGGCTGGCAAAGTCTATGCTGCGGCTACCGAGGACATG 540

Qy        181 AspCysLeuThrPheGlySerProValLeuMetArgHisLeuThrAlaSerGluAlaLys 200
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        541 GACTGCCTCACCTTCGGCAGCCCTGTGCTAATGCGACACCTGACTGCCAGTGAAGCCAAA 600

Qy        201 LysLeuProIleGlnGluPheHisLeuSerArgIleLeuGlnGluLeuGlyLeuAsnGln 220
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        601 AAGCTGCCAATCCAGGAATTCCACCTGAGCCGGATTCTGCAGGAGCTGGGCCTGAACCAG 660

Qy        221 GluGlnPheValAspLeuCysIleLeuLeuGlySerAspTyrCysGluSerIleArgGly 240
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        661 GAACAGTTTGTGGATCTGTGCATCCTGCTAGGCAGTGACTACTGTGAGAGTATCCGGGGT 720

Qy        241 IleGlyProLysArgAlaValAspLeuIleGlnLysHisLysSerIleGluGluIleVal 260
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        721 ATTGGGCCCAAGCGGGCTGTGGACCTCATCCAGAAGCACAAGAGCATCGAGGAGATCGTG 780

Qy        261 ArgArgLeuAspProAsnLysTyrProValProGluAsnTrpLeuHisLysGluAlaHis 280
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        781 CGGCGACTTGACCCCAACAAGTACCCTGTGCCAGAAAATTGGCTCCACAAGGAGGCTCAC 840

Qy        281 GlnLeuPheLeuGluProGluValLeuAspProGluSerValGluLeuLysTrpSerGlu 300
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        841 CAGCTCTTCTTGGAACCTGAGGTGCTGGACCCAGAGTCTGTGGAGCTGAAGTGGAGCGAG 900

Qy        301 ProAsnGluGluGluLeuIleLysPheMetCysGlyGluLysGlnPheSerGluGluArg 320
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        901 CCAAATGAAGAAGAGCTGATCAAGTTCATGTGTGGTGAAAAGCAGTTCTCTGAGGAGCGA 960

Qy        321 IleArgSerGlyValLysArgLeuSerLysSerArgGlnGlySerThrGlnGlyArgLeu 340
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        961 ATCCGCAGTGGGGTCAAGAGGCTGAGTAAGAGCCGCCAAGGCAGCACCCAGGGCCGCCTG 1020

Qy        341 AspAspPhePheLysValThrGlySerLeuSerSerAlaLysArgLysGluProGluPro 360
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db       1021 GATGATTTCTTCAAGGTGACCGGCTCACTCTCTTCAGCTAAGCGCAAGGAGCCAGAACCC 1080

Qy        361 LysGlySerThrLysLysLysAlaLysThrGlyAlaAlaGlyLysPheLysArgGlyLys 380
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db       1081 AAGGGATCCACTAAGAAGAAGGCAAAGACTGGGGCAGCAGGGAAGTTTAAAAGGGGAAAA 1140

RESULT 2
US-08-455-968E-28
; Sequence 28, Application US/08455968E
; Patent No. 5874283
;  GENERAL INFORMATION:
;    APPLICANT:  Harrington, John L.
;    APPLICANT:  Hsieh, Chih-Lin
;    APPLICANT:  Lieber, Michael
;    TITLE OF INVENTION:  Mammalian Flap-Specific Endonuclease
;    NUMBER OF SEQUENCES:  63
;    CORRESPONDENCE ADDRESS:
;      ADDRESSEE:  Townsend and Townsend and Crew LL
;      STREET:  Two Embarcadero Center, 8th Floor
;      CITY:  San Francisco
;      STATE:  California
;      COUNTRY:  USA
;      ZIP:  94111-3834
;    COMPUTER READABLE FORM:
;      MEDIUM TYPE:  Floppy disk
;      COMPUTER:  IBM PC compatible
;      OPERATING SYSTEM:  PC-DOS/MS-DOS
;      SOFTWARE:  PatentIn Release #1.0, Version #1.25
;    CURRENT APPLICATION DATA:
;      APPLICATION NUMBER:  US/08/455,968E
;      FILING DATE:  30-MAY-1995
;      CLASSIFICATION:  435
;    ATTORNEY/AGENT INFORMATION:
;      NAME:  Apple, Randolph T.
;      REGISTRATION NUMBER:  36,429
;      REFERENCE/DOCKET NUMBER:  18985-000100
;    TELECOMMUNICATION INFORMATION:
;      TELEPHONE:  415-576-0200
;      TELEFAX:  415-576-0300
;  INFORMATION FOR SEQ ID NO:  28:
;    SEQUENCE CHARACTERISTICS:
;      LENGTH:  1144 base pairs
;      TYPE:  nucleic acid
;      STRANDEDNESS:  single
;      TOPOLOGY:  linear
;    MOLECULE TYPE:  DNA (polynucleotide)
US-08-455-968E-28

Alignment Scores:
Pred. No.:              1.4e-220      Length:          1144
Score:                  1941.00       Matches:         380
Percent Similarity:     100.0%        Conservative:    0
Best Local Similarity:  100.0%        Mismatches:      0
Query Match:            100.0%        Indels:          0
DB:                     2             Gaps:            0
```